

Docket No. 010474

Serial No. 10/006,903

REMARKS/ARGUMENTS

Claims 1, 3-25, and 27-31 are pending in the application. No claims are amended, cancelled, or added in this response. In the Office Action mailed on August 16, 2005, the Examiner rejected Claims 1, 3-25 and 27-31 under 35 U.S.C. §102(e) as being anticipated by Brown et al. (U.S. Patent no. 6,498,895 B1) ("Brown"). The Examiner also rejected claims 24-29 and 30-31 under 35 U.S.C. §103(a) as being unpatentable over Brown in view of Sih, et al. (U.S. Patent no. 6,608,858 B1) ("Sih"). The applicants respectfully traverse the Examiner's rejections.

Referring to claim 1 as a representative claim of the independent claims, claim 1 recites "using both the pilot symbols and the soft decisions for frequency tracking of the first wireless signal". Applicants respectfully submit that Brown does not discuss or show this step. Brown discusses a method of channel phase compensation where a demodulated signal is analyzed and an estimate of channel phase is generated based on the reliability of a channel symbol. The method includes iteratively generating channel symbol reliability for the same symbol until a frame containing the symbol is determined to pass or fail. Brown, however, does not directly or implicitly teach to track frequency. Both phase and frequency errors must be determined to accurately demodulate a signal. Brown suggests a solution for determining phase compensation but does not address frequency tracking. The Examiner cited to figs 1-2 element 28 or 242 or 276 and col. 3 lines 12-23 and col. 4, lines 1-60 for support that Brown teaches using both the pilot symbols and the non-pilot symbols for feedback controlling is the same as the claimed (frequency tracking) of the first wireless signal. The cited sections discuss channel phase estimation. Nowhere in any of these sections is a discussion of frequency tracking. Accordingly, applicants respectfully submit that Brown does not disclose all of the steps of any one of independent claims and that claims 1, 21, 22, 23, and 30 are allowable.

Regarding claims 3-20, 24, 25, 27-29 and 31, each of these claims depends from one of the independent claims, which applicants submit are allowable. Accordingly, applicants respectfully submit that claims 3-20, 24, 25, 27-29 and 31 are at least allowable because the claims depend from an allowable base claim.

Docket No. 010474

Serial No. 10/006,903

The Examiner rejected claims 24-29 under 35 U.S.C. §103(a) as being unpatentable over Brown in view of Sih, et al. (U.S. Patent no. 6,608,858 B1) ("Sih"). Applicants respectfully submit that the references do not, individually or in combination, teach or suggest all of the limitations of any one of these claims and that there is no suggestion or motivation to combine the references.

Claims 24, 25, 27-29 depend from claim 23 which recites an apparatus comprising "a feedback loop to the rotator and the soft decision generator that provides an estimate of a frequency error associated with the signal, wherein the feedback loop generates the estimate of the frequency error using pilot symbols and soft decisions". Applicants respectfully submit that neither Brown, nor Sih, nor a combination of the two, teach or suggest this element. Brown teaches a method of phase channel estimation and does teach or suggest determining a frequency error. Sih teaches a method of performing a handoff and does not suggest to determine a frequency error based on pilot signals and soft decisions regarding symbol values. Accordingly, applicants respectfully submit that the references do not, individually or in combination, teach or suggest a feedback loop that "generates the estimate of the frequency error using pilot symbols and soft decisions" and that claims 24-29 are allowable.

Applicants respectfully submit that there is no suggestion in either reference to combine the references and that the combination of Brown and Sih is improper. Brown teaches a method of phase channel estimation and does not teach a method for determining a frequency error. There is no suggestion in Brown that the phase channel estimating techniques can be used for frequency error determination or can be combined with a method for soft handoffs. Sih does suggest that the method of frequency error correction can be used with a channel phase compensation technique. The two references address different solutions to different problems. A technique of frequency tracking for compensating for Doppler shift is significantly different from a method of channel phase estimation based on demodulated symbols.

Docket No. 010474**Serial No. 10/006,903**

The Examiner rejected claims 30-31 under 35 U.S.C. §103(a) as being unpatentable over Brown in view of Sih. Applicants respectfully submit that the references do not, either individually or in combination, teach or suggest all of the limitations of claim 30 or claim 31 and that there is no suggestion to combine the references.

Claim 30 recites "a frequency discriminator coupled to the soft decision generator that calculates residual frequency error estimates using the pilot symbols and the soft decisions". Applicants respectfully submit that neither Brown, nor Sih, nor a combination of the two, teach or suggest this element. Brown teaches a method of phase channel estimation and does teach or suggest determining a frequency error. Sih teaches a method of performing a handoff and does not suggest to determine a frequency error based on pilot signals and soft decisions regarding symbol values. Accordingly, applicants respectfully submit that the references, neither individually nor in combination, teach all of the elements of claim 30 or claim 31 and that these claims are allowable.

Docket No. 010474

Serial No. 10/006,903

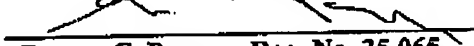
REQUEST FOR ALLOWANCE

In light of amendments and arguments presented above, the Applicant respectfully submits that the instant claims are patentable. Accordingly, reconsideration and allowance of this Application is earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

Dated: 1/6/06

By: 
George C. Pappas, Reg. No. 35,065
Attorney for Applicant
Registration No.

QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, California 92121-2779
Telephone: (858) 685-5787
Facsimile: (858) 658-2502